



QLF

NETWORKING

Virtual Technical Meetings



Unified Life Cycle Management using TF Operator Integration with Airship

Prabhjot Singh Sethi – ATS



- Introduction
 - Tungsten Fabric Distribution
 - Deployment & Life Cycle Management (LCM)
 - Tungsten Fabric Operator (TF-Operator)
- Multiple Supported Installation Options
 - TF-Operator Role
- Use-Case: Airship
 - Requirements
 - On Boarding TF Operator
 - Reference implementation and validation with Airship in a Bottle

Tungsten Fabric – Distribution



- Tungsten Fabric is packaged and distributed as Container Images

Deployed As:



kubernetes

LCM Requirements for TF Modules:

- Modules deployed in order
- Stateful Infra components reached to required state before roll-out of dependent components (like zookeeper)
- Upgrades are performed ensuring inter-dependency between modules
- Version dependencies between components
- Network Provider – Handling cluster scaling events

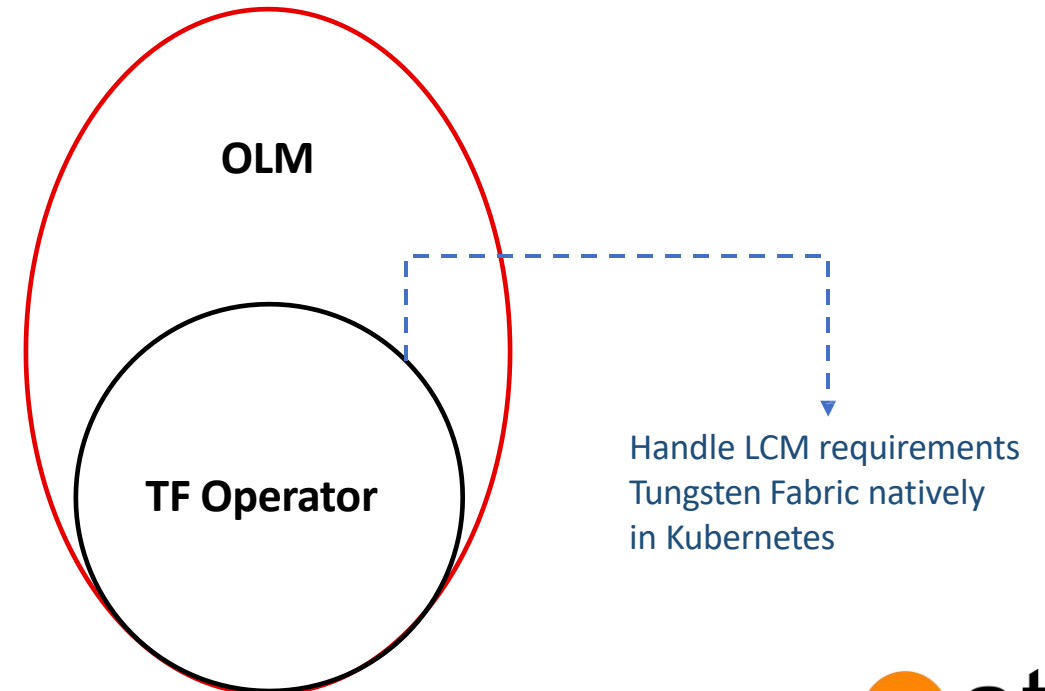


Operators

- Kubernetes Controller
- Framework
 - Operator SDK – Development kit around K8S API
 - Operator Life Cycle Manager – Oversees installation/updates and management of lifecycle of all operators aspect
 - Operator Metering – Enables usage reporting
- Purpose-built, with operational knowledge baked in, usually smarter and more tailored than generic tools
- Enables packing of automated operation logic as part of Operator
 - Allow on boarding complex automations

TF Operator

- Kubernetes Controller built using Operator SDK
- Built-in logic to address Life Cycle Management requirements of Tungsten Fabric



Deployment Landscape



OPENSIFT



docker



ANSIBLE

Multiple Installation schemes



JUJU



OPERATOR



- Integration with various solutions
- Life Cycle management of software

- Maintenance Cycle
- Engineering Cost

Simplify – Life Cycle Management

✓ Improve Manageability

✓ Reduce Cost

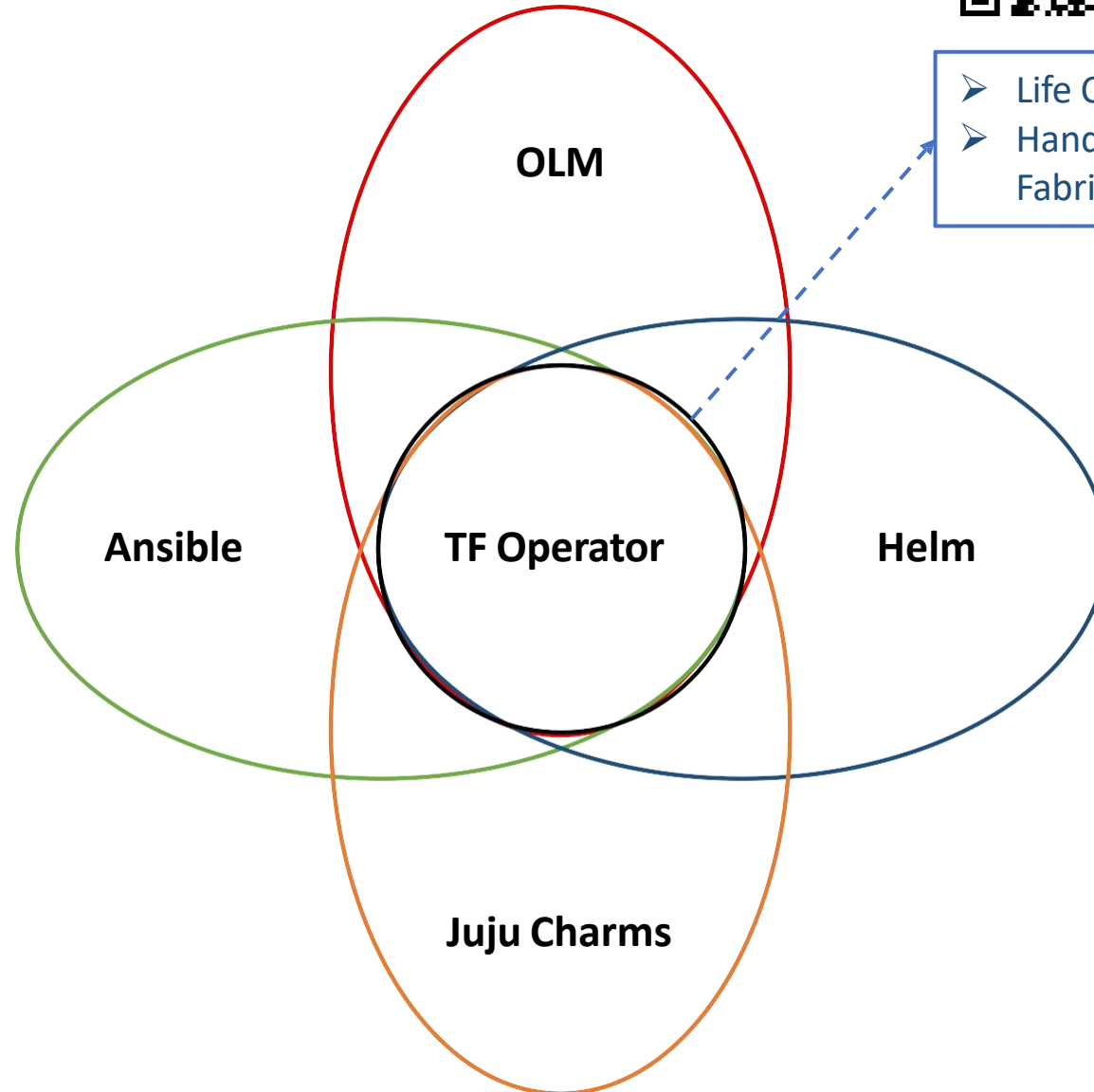


- Unify LCM handling for Tungsten Fabric
- Simplification of TF integrations into multiple deployments
- Handle seamless version dependency between components
- Cluster Scaling

TF Operator – Unification



kubernetes
Based Deployments



- Life Cycle Manager for Tungsten Fabric
- Handle LCM requirements of Tungsten Fabric natively in Kubernetes

Addressed TF integrated Deployments



kubernetes



kubeadm



airship

 *tungstenfabric*
Operator



OPENSIFT



ats
NEXT GENERATION NETWORKS



CANONICAL



OpenStack



 *tungstenfabric*

 *ats*
NEXT GENERATION NETWORKS

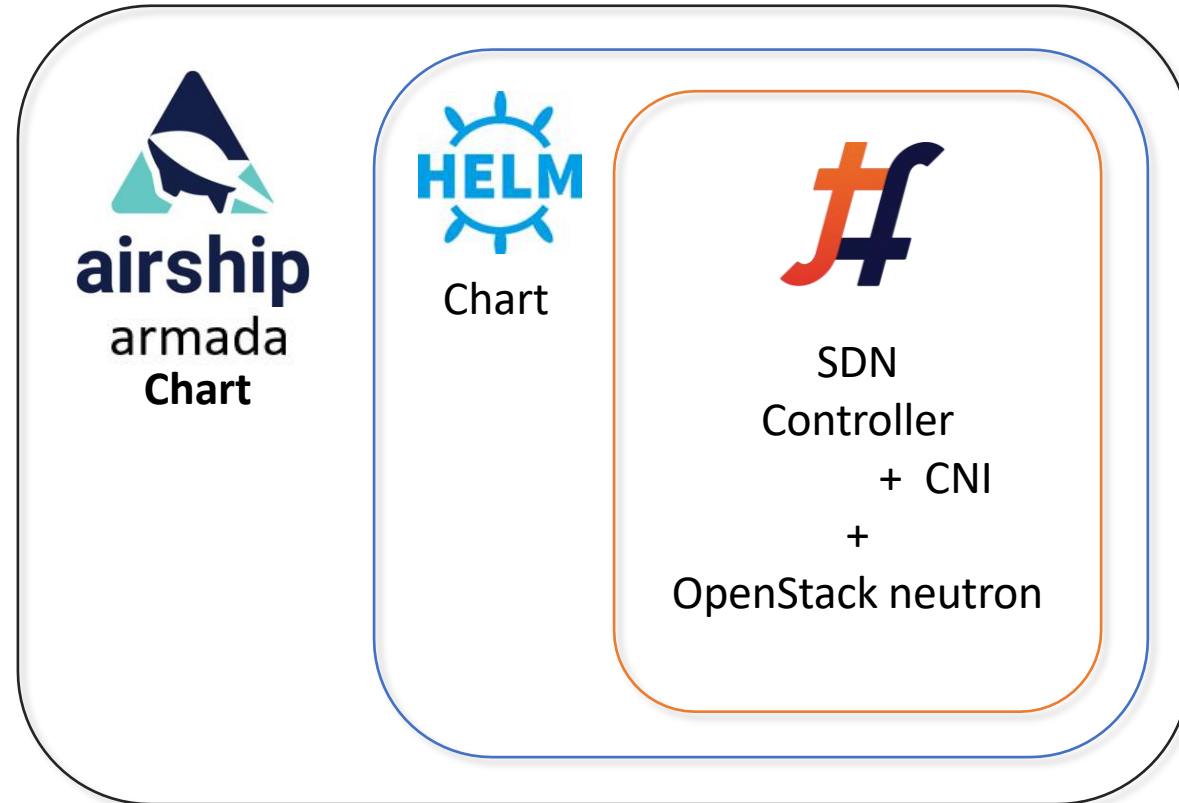


Use Case: Integration with Airship

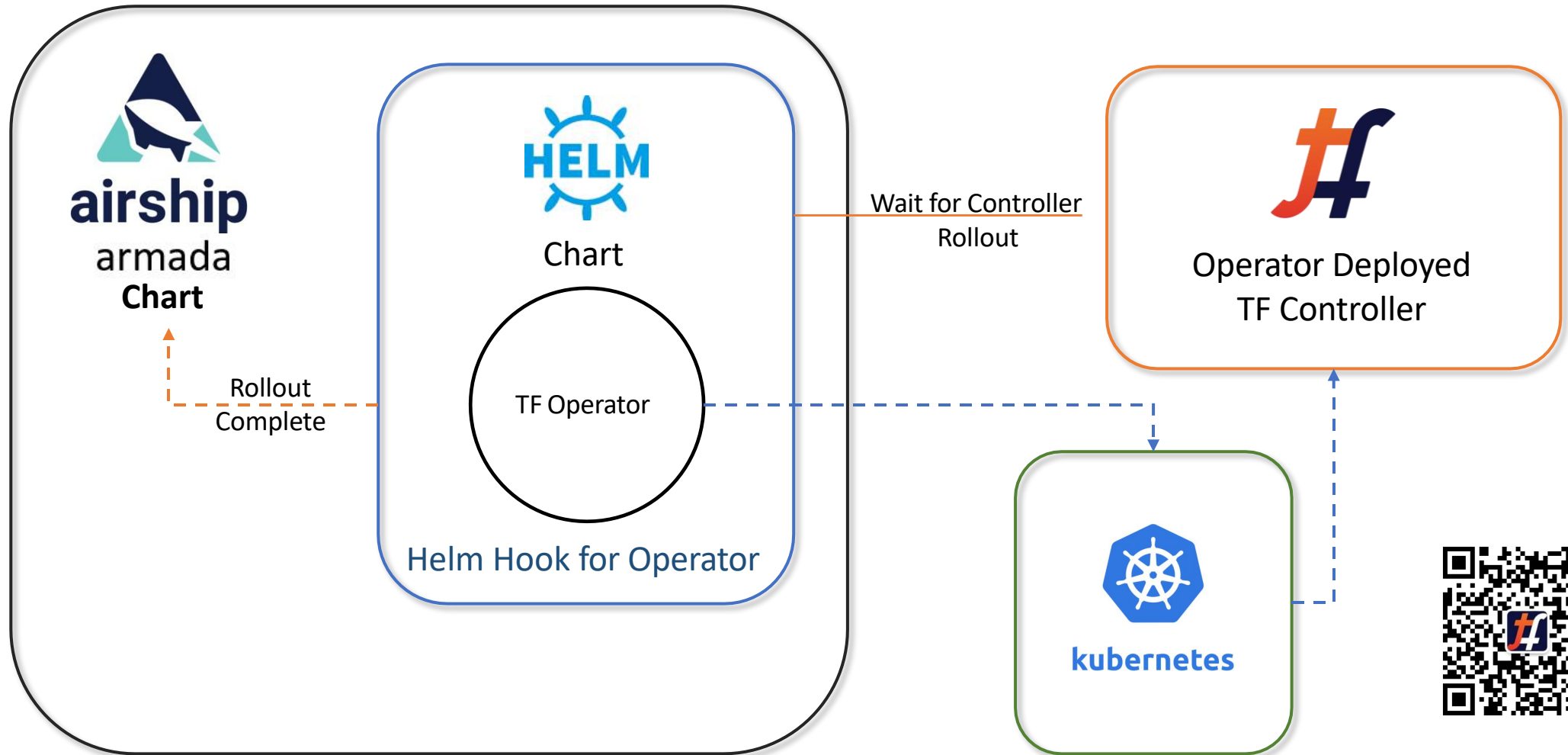
Airship – Requirements



- Define corresponding Airship armada chart
- Added to airship site definition
- Roll out using shipyard



Airship – On Boarding TF Operator



Reference Implementation



<https://github.com/atsgen/tf-operator-helm-hook>



<https://github.com/atsgen/treasuremap>



OLF
NETWORKING

Virtual Technical Meetings

Open For Discussion

 *tungstenfabric*

 **ats**
NEXT GENERATION NETWORKS